

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT	PAGES 11	PAGE 1
<i>ENGINEERING & COMPLIANCE DIVISION</i>	APPL NO. 454902	DATE 04/06/06
APPLICATION PROCESSING AND CALCULATIONS	PROCESSED BY E. Ruivivar	CHECKED BY

APPLICATION NO. 454902
 PERMIT TO CONSTRUCT
 - Change of Condition -

APPLICANT NAME AND ADDRESS:

Mountainview Power Company LLC
 2492 W. San Bernardino Ave.
 Redlands, CA 92374-5016

SCAQMD Facility ID# 121737

EQUIPMENT LOCATION:

Same as above

RESPONSIBLE OFFICIAL:

Mr. Nader Mansour, Vice-President
 Mountainview Power Company LLC
 2492 W. San Bernardino Ave.
 Redlands, CA 92374-5016

Phone: 626-302-9459

CONTACT PERSON:

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SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT	PAGES 11	PAGE 2
<i>ENGINEERING & COMPLIANCE DIVISION</i>	APPL NO. 454902	DATE 04/06/06
APPLICATION PROCESSING AND CALCULATIONS	PROCESSED BY E. Ruivivar	CHECKED BY

EQUIPMENT DESCRIPTION:

Section H of the Mountainview Facility Permit, ID# 121737

[Additions to the equipment description are noted in bold and underlines. Deletions are noted in strikeouts.]

Equipment	ID No.	Connected To	Source Type/ Monitoring Unit	Emissions	Conditions
Process 6: INTERNAL COMBUSTION					
System 2: DIESEL ENGINES					
INTERNAL COMBUSTION ENGINE, EMERGENCY POWER, LEAN BURN, DIESEL FUEL, CATERPILLAR, 3512B, WITH AFTERCOOLER, TURBOCHARGER, <u>AUTOMATIC FUEL INJECTION TIMING RETARD</u> , 2,155 BHP A/N 438746 <u>454902</u> DIESEL PARTICULATE FILTER, CLEANAIR SYSTEMS "PERMIT", WITH SIX 15" X 15" PARALLEL OXIDIZING FILTER ELEMENTS.	D61		NOX: PROCESS UNIT	CO: 0.072 GRAM/BHP-HR DIESEL (4) [RULE 1303(a)(1)-BACT, 5-10-1996]; NOX: 6.53 GRAM/BHP-HR DIESEL (4) [RULE 2005, 4-9-1999] NOX: 469 LBS/1000 GAL DIESEL (1) [RULE 2012, 12-5-2003]; PM: (9); PM10: 0.024 GRAM/BHP-HR DIESEL (4) [RULE 1303(a)(1)-BACT, 5-10-1996] VOC: 0.026 GRAM/BHP-HR DIESEL (4) [RULE 1303(a)(1)-BACT, 5-10-1996]	B61.1, C1.2, E177.1 , E162.1, E193.2, I296.1, & K67.5

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT	PAGES 11	PAGE 3
<i>ENGINEERING & COMPLIANCE DIVISION</i>	APPL NO. 454902	DATE 04/06/06
APPLICATION PROCESSING AND CALCULATIONS	PROCESSED BY E. Ruivivar	CHECKED BY

CONDITIONS:

The following permit conditions shall apply to the diesel engines in order to comply with all applicable District, State, and Federal standards. Additions and deletions to the conditions are noted in underlines and strikeouts, respectively.

FACILITY –

F9.1 Except for open abrasive blasting operations, the operator shall not discharge into the atmosphere from any single source of emissions whatsoever any air contaminant for a period or periods aggregating more than three minutes in any one hour which is:

- a) As dark or darker in shade as that designated No. 1 on the Ringelmann Chart, as published by the United States Bureau of Mines; or
- b) Of such opacity as to obscure an observer's view to a degree equal to or greater than does smoke described in subparagraph (a) of this condition.

[Rule 401]

F14.1 The operator shall not use Diesel fuel in this equipment containing sulfur compounds in excess of
0.05 percent by weight.

[Rule 431.2]

F14.2 The operator shall not purchase Diesel fuel containing sulfur compounds in excess of 15 ppm by weight as supplied by the supplier.

[Rule 431.2]

F18.1 Acid Rain SO₂ Allowance Allocation for affected unit are as follows:

Device ID	Boiler ID	Containment	Tons in any year
1	Boiler No. 1	SO ₂	117
2	Boiler No. 2	SO ₂	17

PROCESS – None

SYSTEM – None

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT	PAGES 11	PAGE 4
<i>ENGINEERING & COMPLIANCE DIVISION</i>	APPL NO. 454902	DATE 04/06/06
APPLICATION PROCESSING AND CALCULATIONS	PROCESSED BY E. Ruivivar	CHECKED BY

DEVICE – Diesel Emergency Generator Engine (D61), A/N 454902

B61.1

The operator shall only use diesel fuel containing the following specified compounds:

Compound	Limit	ppm by weight
Sulfur	Less than or equal to	15

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002; RULE 1470, 3-4-2005]

[Devices subject to this condition : D58, D61]

C1.2

The operator shall limit the operating time to no more than 200 hour(s) in any one year.

To comply with this condition, the operator shall install and maintain a(n) non-resettable elapsed time meter to accurately indicate the elapsed operating time of the engine.

The total operating time allowed under this condition includes no more than 50 hours in any one year for maintenance and testing.

[RULE 1110.2, 11-14-1997; RULE 1304(a)-Modeling and O₃ set Exemption, 6-14-1996; RULE 1401, 5-3-2002; RULE 1470, 3-4-2005; RULE 2012, 12-5-2003; RULE 2012, 1-7-2005]

[Devices subject to this condition : D61]

~~C177.1~~

~~The operator shall set and maintain the fuel injection timing of the engine at 4 degrees retarded relative to standard timing.~~

~~[RULE 1303(a)(1) BACT, 5-10-1996; RULE 1303(a)(1) BACT, 12-6-2002; RULE 2005, 4-20-2001; RULE 2005, 5-6-2005]~~

~~[Devices subject to this condition : D61]~~

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT	PAGES 11	PAGE 5
<i>ENGINEERING & COMPLIANCE DIVISION</i>	APPL NO. 454902	DATE 04/06/06
APPLICATION PROCESSING AND CALCULATIONS	PROCESSED BY E. Ruivivar	CHECKED BY

E162.1

The operator shall use this equipment only during utility failure periods, except for maintenance purposes.

[RULE 1110.2, 11-14-1997; RULE 1304(c)-Offset Exemption, 6-14-1996; RULE 1401, 3-4-2005]

[Devices subject to this condition : D61]

E193.2

The operator shall operate and maintain this equipment according to the following specifications:

The Cleanair Systems "PERMIT" filter system installed for the equipment shall be operated according to the following criteria: (1) The maximum consecutive minutes at idle shall not exceed 240 minutes; (2) The number of 10-minute idle sessions before regeneration is required shall be after 24 consecutive sessions; (3) The minimum temperature/load/time for regeneration shall not be less than 40% load or 300 deg. C for 30% of operating time or 2 hrs, whichever is longer.

The Cleanair Systems "PERMIT" filter system installed for the equipment shall be provided with a data logging and alarm system to record and monitor the equipment's exhaust backpressure and temperature during operation.

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002; RULE 1470, 3-4-2005]

[Devices subject to this condition : D61]

I296.1

This equipment shall not be operated unless the operator demonstrates to the Executive Officer that the facility holds sufficient RTCs to offset the prorated annual emissions increase for the first compliance year of operation. In addition, this equipment shall not be operated unless the operator demonstrates to the Executive Officer that, at the commencement of each compliance year after the first compliance year of operation, the facility holds sufficient RTCs in an amount equal to the annual emissions increase.

To comply with this condition, the operator shall limit the 1st year cumulative facilitywide NOx emissions from all equipment to no more than 492,897 lbs/yr. The purpose of this condition is

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT	PAGES 11	PAGE 6
<i>ENGINEERING & COMPLIANCE DIVISION</i>	APPL NO. 454902	DATE 04/06/06
APPLICATION PROCESSING AND CALCULATIONS	PROCESSED BY E. Ruivivar	CHECKED BY

to insure the facility does not exceed the 1st year RTCs provided for the project. This condition shall apply during the 1st 12 months of operation, commencing with the initial operation of the first gas turbine (Devices D18, D27, D36, or D45).

To comply with this condition, the operator shall, prior to the beginning of all years subsequent to the 1st compliance year, hold a minimum of 464,338 lbs of NO_x RTCs for operation of all equipment at the facility. In accordance with Rule 2005(f), unused RTCs may be sold only during the reconciliation period for the fourth quarter of the applicable compliance year inclusive of the 1st compliance year.

[RULE 2005, 4-20-2001; RULE 2005, 5-6-2005; RULE 2012, 5-11-2001; RULE 2012, 12-5-2003]

[Devices subject to this condition : D18, D27, D36, D45, D58, D61]

K67.5

The operator shall keep records, in a manner approved by the District, for the following parameter(s) or item(s):

Date of each operation, the elapsed time in hours, and the reason for operation

Records obtained from a data logger and alarm system provided for use on the equipment's diesel particulate filter.

Records shall be kept and maintained on file for a minimum of five years, and shall be made available to authorized District personnel upon request.

[RULE 1110.2, 11-14-1997; RULE 1304(a)-Modeling and O₃ set Exemption, 6-14-1996; RULE 1401, 5-3-2002; RULE 1470, 3-4-2005]

[Devices subject to this condition : D61]

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT	PAGES 11	PAGE 7
<i>ENGINEERING & COMPLIANCE DIVISION</i>	APPL NO. 454902	DATE 04/06/06
APPLICATION PROCESSING AND CALCULATIONS	PROCESSED BY E. Ruivivar	CHECKED BY

BACKGROUND / GENERAL INFORMATION:

The Mountainview Power Company, LLC (MVPC) was granted a Permit to Construct (new construction) on 6-23-05 under AN 438716 for a new emergency 2,155 hp diesel engine, a Caterpillar Model 3512B (see **Appendix A** for copy of permit). One of the conditions of the permit, Cond. C177.1 on fuel injection timing retard (see Appendix A), was specified to address a comment from EPA received in an e-mail dated 5-27-05 (see **Appendix B** for copy) in response to a Title V minor permit modification review request letter dated 5-4-05 (see **Appendix C** for copy) from AQMD on the subject equipment.

In an inspection conducted by Compliance on 2-14-06, it was determined that, because the equipment is provided with an automatic fuel injection timing retard, the subject equipment can not be shown to meet the requirement of Cond. C177.1 which states that "The operator shall set and maintain the fuel injection timing of the engine at 4 degrees retarded relative to standard timing".

On 3-21-06, MVPC submitted this subject application (AN454902) for a change/correction/deletion of Cond. C177.1 described above considering that the subject equipment is said to be equipped with an electronic control module for its fuel injection timing to achieve its permitted emission levels. Because of its automatic electronic design, the fuel injection timing on the subject engine can not be mechanically set and maintained at the required level to comply with the said permit condition. No other change was requested by MVPC on the permit.

Application No. 455138 was submitted on 3-29-06 for the resulting Title V revision and facility permit amendment on the proposed permit condition change.

COMPLIANCE RECORD REVIEW:

District records on the subject equipment since it started operation in December, 2005 only show the compliance problem referred to above.

PROCESS DESCRIPTION: [No change from previous AN438716]

The purpose of the subject diesel engine-generator set is to provide emergency backup power to plant equipment in the case of loss of grid power. The diesel generator, however, is not intended to provide grid power during such power loss. It would only provide power to the plant turbines as needed for start-up so that they may supply grid power. The said engine is provided with a Cleanair Systems particulate filter which is also designed to reduce ROG & CO by more than 90% & 95% respectively. This control equipment is equipped with a HiBack data logging & alarm system to record and monitor exhaust backpressure and temperature to provide useful information on engine and control equipment performance.

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT	PAGES 11	PAGE 8
ENGINEERING & COMPLIANCE DIVISION	APPL NO. 454902	DATE 04/06/06
APPLICATION PROCESSING AND CALCULATIONS	PROCESSED BY E. Ruivivar	CHECKED BY

The subject equipment is allowed to be operated less than 200 hours per year including not more than 50 hrs per year for maintenance and readiness testing as allowed under R1470. It is located at more than 1000 feet from the outer boundary of a school and other such sensitive sources. The engine is operated for not more than 1 hour per day, at least once a week for maintenance and readiness testing.

The following engine specifications given in the previous AN438716 would remain the same after the proposed change of condition.

Engine Manufacturer:	Caterpillar
Model Number:	3512B
Maximum Rating:	2,155 hp @ 1,800 RPM
Maximum Fuel Consumption:	110.2 gallons per hour
Maximum Exhaust Flow (wet):	12,643 cfm @ 861 deg. F
Exhaust Temperature:	861°F
Configuration:	lean burn, 4 cycle, turbocharged/aftercooled
No. of Cylinders & Configuration:	12-cylinder V engine
Emission Control Equipment	Cleanair Systems "PERMIT" particulate filter unit consisting of 15" x 15" six parallel oxidizing filter elements. A HiBack data logging and alarm system would be provided.

EMISSION CALCULATIONS:

The proposed change of condition on fuel injection timing retard is not expected to change the emissions previously calculated and reported which are as follows:

Pollutant	Maximum Emissions		30 Day Average Emissions	Annual Emissions
	lbs/hr	lbs/day	lbs/day	lbs/yr
ROG	0.13	0.13	0.02	6.5
NO _x	30.98	30.98	5.16	1,549
SO _x	0.02	0.02	0.003	1.0
CO	0.34	0.34	0.06	17
PM10	0.11	0.11	0.02	5.5

Notes:

Maximum daily emissions are based on 1 hr/day operation

30 day average emissions are based on 1hr/day, 5 hrs/mon

Annual emissions based on 1 hr/day, 1 day/wk, 50 weeks/yr or 50 hrs/yr since

PM10 emission is between 0.01 – 0.15 gm/bhp-hr (R1470)

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT	PAGES 11	PAGE 9
<i>ENGINEERING & COMPLIANCE DIVISION</i>	APPL NO. 454902	DATE 04/06/06
APPLICATION PROCESSING AND CALCULATIONS	PROCESSED BY E. Ruivivar	CHECKED BY

EVALUATION / RULE COMPLIANCE:

The proposed change of condition on fuel injection timing retard is basically a change on how this NOx control strategy on the subject diesel engine be implemented, not by mechanically setting of the timing retard to the required level but by using an electronic module that tracks some operating parameters of the engine and automatically sets and adjust the timing retard to a level to achieve the emission levels specified by the manufacturer for the engine. Both control modes, mechanical setting or automatic control, are designed to achieve comparable emission reductions, the former being applied mostly to older engines while latter mode, which is expected to perform better for it adjusts the engine to various changing conditions, is very common to newer engines. The subject engine happens to be a newer engine that uses automatic fuel injection timing retard and should, therefore, not be penalized for using this control mode. Unfortunately, the applicability of Cond. 177.1 which provides for mechanical setting of the timing retard was overlooked in the permitting process and also by the permit holder until discovered recently. Therefore, the subject permit condition may be deleted without change to the previously reported engine emissions by the manufacturer. Also, the current equipment description on the subject engine should be revised to indicate that it is provided with automatic fuel injection timing retard.

RULE 212: STANDARDS FOR APPROVING PERMITS: The public notice requirements of this rule would not apply since this equipment would not be located within 1,000 feet of a school, and the proposed change of condition would not result in any emission increase. Also, the engine emissions do not exceed the corresponding emission thresholds for public notice under R212(g).

RULE 401: VISIBLE EMISSIONS: With proper maintenance and operation, visible emissions are not expected.

RULE 402: NUISANCE: Nuisance complaints are not expected (only standby operation).

RULE 404: The equipment would only be operated during emergency and maintenance/readiness testing. Compliance is expected.

RULE 431.2 The applicant would use ultra clean diesel that would comply with sulfur content limit of 15 ppm [0.0015% by weight].

RULE 1110.2 The equipment is an emergency standby engine with operation limited to not more than 200 hrs/yr; therefore, it is exempt from the requirements of this rule per sub- section (i)(2).

REG XIII: NEW SOURCE REVIEW:

The proposed change of condition would not result in any emission increase; therefore, the provisions of this regulation do not apply.

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT	PAGES 11	PAGE 10
<i>ENGINEERING & COMPLIANCE DIVISION</i>	APPL NO. 454902	DATE 04/06/06
APPLICATION PROCESSING AND CALCULATIONS	PROCESSED BY E. Ruivivar	CHECKED BY

RULE 1401: NEW SOURCE REVIEW OF CARCINOGENIC AIR CONTAMINANTS: This standby emergency ICE is exempt from the rule requirements as per R-1401 (g)(1)(F).

RULE 1470: For compliance with this rule's requirements, appropriate permit conditions are already included per Mike Mill's e-mail of 4/9/2004 in the facility permit. The new engine would meet the 0.15 gm PM10/bhp-hr emission limit of this rule. Its PM10 emission is expected to be about 0.024 gm/bhp-hr [between 0.01 to 0.15 gm/bhp-hr] and therefore, at this level would be allowed to have 50 hours/yr for testing and maintenance.

Reg. XVII: There is no emission increase that would trigger applicability of this regulation. The subject engine has gone through PSD review by EPA from which the requirement on the fuel injection retard timing was derived from (see Appendix B).

RULE 2001: This facility is included in NOx RECLAIM Cycle 1.

RULE 2002: Facility's NOx allocations are calculated as per rule requirements.

RULE 2004: The facility will follow rule requirements for permits, allocations, reporting, variances and breakdowns.

RULE 2005: Emergency nonutility generators which operate less than 200 hrs/hr, like the subject equipment, are exempt from modeling by Rule 2005(k)(5). Since there would be no change in emissions, compliance with the RTC and BACT provisions of this rule as previously determined would be maintained.

RULE 2012: Monitoring, Reporting and Record Keeping Requirements: The applicant would continue to comply with reporting and record keeping requirements of this rule for the subject ICE (as a process unit).

Reg. XXX: The applicant's facility is an existing Title V facility. The proposed change of condition on the subject equipment would not result in an increase of non-Reclaim pollutants based on a 30-day ave. In addition, there would be no increase in the existing RTC requirements for this facility; therefore, such a change in the Title V permit may be considered as a minor revision. The existing Title V permit would be revised to reflect the proposed change of condition and would be processed simultaneously with the Permit to Construct. The AQMD engineering analysis along with the draft permit would be forwarded to the EPA for their review and comment on the application within a 45-day period.

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT	PAGES 11	PAGE 11
<i>ENGINEERING & COMPLIANCE DIVISION</i>	APPL NO. 454902	DATE 04/06/06
APPLICATION PROCESSING AND CALCULATIONS	PROCESSED BY E. Ruivivar	CHECKED BY

RECOMMENDATION:

Based on the foregoing, the proposed change of condition meets all the applicable rules and regulations of the District. It is, therefore, recommended that a Permit to Construct be issued following (1) the conclusion of a 45-day EPA review period or earlier EPA approval/no comment, and (2) subject to any comments received during this period. The subject engine should be included in Section H of the facility permit, subject to the conditions identified on pages 4 to 6 and with revised equipment description as shown on page 2.

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